

INTERNATIONAL CITY MANAGERS' ASSOCIATION
1313 EAST 60TH STREET - CHICAGO 37, ILLINOIS

Page 707

Report
105 Oct.-'52

Route To:

Return To:

This report was prepared in response to an inquiry from a municipality subscribing to this Service and is distributed to all subscribers. The contents may not be reproduced without permission.

MUNICIPAL POLICY ON SANITARY SEWER EXTENSIONS

What are the essentials of a sewer extension policy? How are sewers financed and costs allocated, and what are current practices in controlling sewer extensions?

Rising labor and materials costs coupled with increased population and sanitary needs are forcing cities to adopt or review policies on sanitary sewer extensions. City councilmen and other city officials are asking such questions as: When should sewers be extended? How much of the cost should be borne by the city? How should costs be allocated to property owners? How should construction be financed? This report reviews the policies for sewer extension and financing and shows how these policies have been applied in seven cities.

The sanitary sewerage system of the average city consists of several parts: (1) out-fall sewers which connect the sewerage system to the disposal plant; (2) collecting mains or trunk lines which receive sewage from one or more branches or tributaries; (3) branch sewers which collect sewage from laterals and serve a relatively small area; and (4) laterals which are connected directly to the property and have no other tributaries.

Three methods generally are used to initiate proceedings for the extension of sewer lines: (1) a petition from the property owners requesting installation of a lateral; (2) a resolution by the city council ordering installation of the lateral as a public health measure; and (3) subdivision of a tract of land into building lots. City policy on allocation and payment of costs should be similar in all cases. As a general rule, no extensions should be made except to areas which are built up, or definitely will be, and where property owners are prepared to pay for at least part of the improvement.

Municipal policies on sewer and other utility extensions should be developed as part of city planning. The city master plan will govern land use for industry, commerce, residence, and recreation, and it is put into effect largely through zoning and land subdivision controls. Public utilities are financed and developed in accordance with land use so that all sections have good service.

Annexation policies, where state laws permit, will control urban fringe areas and allow orderly extension of utilities. Palo Alto, Calif., for example, immediately lays sewer lines in newly annexed areas and levies special assessments against benefited properties.

City subdivision policies should establish a minimum area which can be subdivided and require the installation of sewers and other utilities before acceptance of the plat by the city as, for example, in Palo Alto. Such a rule relieves the city from financial responsibility for extensions, forestalls purely speculative subdividing, and insures a more orderly growth for the city. The subdivider adds the cost of sewers and other utilities to the price of the lot and thus makes separate financing by the buyer unnecessary. Then, too, if utilities are installed before streets are built, it will not be necessary to open recently paved streets.

(Over)

Within the framework of city planning, the city council should adopt comprehensive sewer extension rules to insure equal treatment of old and new customers and to permit scheduling of sewer extensions. The council policy should vest ownership of all extensions in the city. The city engineering department should design the extension or should check the design for conformance to city specifications, and no extensions of the sewerage system and no connections to the system should be allowed without the prior approval of the city manager or city engineer.

Subsequent sections of this report will discuss the provisions of the sewer extension policy including establishing the city's share of construction costs, methods of payment by property owners, allocation of costs to property owners, extending sewers outside city limits, and rules for making taps or connections to sewers.

Establishing the City's Share of the Cost. In general the city should pay for only that portion of the costs of any public improvement which is of benefit to the entire city. Benefits from sewers can be defined fairly accurately and most cities follow a uniform policy. In most cities construction costs for out-fall and trunk sewers are paid by the city at large.

Costs for branches and laterals are paid by the property owners served subject to modifications in many cities for special circumstances. Such modifications are based on the assumption that the entire city benefits, as a public health measure, by the extension of the sewerage system to all parts of the city. The different methods of determining the amount of benefit accruing to the city at large for branches and laterals include:

1. The city assumes the cost of intersections, restoring disturbed streets, and manholes.
2. The city assumes construction costs caused by special design features or terrain such as pumping stations, traps or clean-out structures, excessive depth, excavation of rock or shale, or extra-size pipe.
3. The city sets an arbitrary amount of money as its portion or pays for the first 50 or 100 feet of an extension.
4. The city makes an estimate of the costs before construction and pays any costs in excess of the estimate.
5. The city pays the legal, engineering, and administrative costs.
6. The city establishes a standard charge for connection to any extension and pays the balance of construction costs.

Methods of Payment by Property Owners. The city must assure payment of construction costs before work begins. If the city does the work, payrolls have to be met and inventories of materials and supplies restored as the work progresses. It will be difficult, if not impossible, for the city to get a satisfactory bid on a contract unless the financing details are worked out in advance. Cities use three different methods to obtain money for construction: requiring payment in advance, issuing special assessment bonds, and establishing a revolving fund.

1. Payment in Advance. The requirement that property owners pay in advance for sewer extensions is the best and most easily administered policy. This method has the advantage of cash in hand before construction begins. It insures good faith on the part of the property owners and saves the administrative, legal, and financing costs of other methods. The property owners who desire an extension petition the council, an engineering survey is made to estimate costs which are allocated to the property owners in accordance with a previously established formula, and the individual property owners deposit their shares before construction begins. The city can refund over-payments or require the property owners to make supplementary payments if necessary.

2. Special Assessment Bonds. Financing public improvements by special assessment bonds is the traditional method and is used by Phoenix, Grand Rapids, Palo Alto, Schenectady, and Wichita to finance sewer construction. Under this system the city follows a standard formula to allocate construction costs to the benefited property and issues bonds as an obligation against each lot or parcel in the benefited area. The bonds can be disposed of in at least three ways: (1) the city offers the bonds to the contractor in payment for construction costs; (2) the city sells the bonds to a bank or other financial institution at a discount; or (3) the city retains the bonds, pays the contractor out of current revenues or reserves, and collects the payments as they fall due.

Most cities follow the last named policy since special assessment bonds are difficult to collect and financial institutions are wary of them. The legal, administrative, and collection procedures are involved and costly, and the bonds usually must be sold at a high rate of interest. MIS Report No. 70 contains a complete discussion of the special assessment method of financing public works.

3. Revolving Funds. The city can establish a public improvement revolving fund from surplus in the general fund, reserves in the utility funds, or an issue of general obligation bonds (as done in Garden City, Michigan). Once established, the fund is used to finance sewer extensions and other public works. Property owners reimburse the fund by paying their share of the cost when they connect to the sewer, and they may be allowed to pay in installments. The size of the fund will depend upon the amount of construction contemplated in the near future. To assure good faith on the part of the petitioners and to avoid tying up city money on capital structures benefiting only a small segment of the population, it is wise to require property owners to pay a portion of the costs, 25 per cent or more, in advance of construction.

Revolving funds have serious disadvantages for financing sewer extensions. Such funds must be carried separately from regular budget appropriations, and it is harder to show the total picture of work being done by the city. They may be used by some as a device to dodge responsibility for planning and executing an essential city service. Revolving funds should be limited to financing internal management uses such as central stores and motor equipment pools.

Allocation of Costs to Property Owners. No matter what financing plan is used or what portion of the cost is considered as general benefit, the amount remaining must be allocated among the benefiting properties. No apportionment measure is entirely adequate, and the best method for the individual community may be the one which is easiest to determine, most readily understood, and least controversial.

In general only those properties which can connect directly to a sewer should be required to pay for it. An individual lot or parcel of ground should pay for only one lateral and one branch sewer even though the property could be served by two or more laterals. The major methods of apportioning costs are frontage, area, and flat rate.

The frontage method, in its simplest form, consists of determining the total property frontage served by the sewer, dividing the total into the cost of the sewer extension to get the rate per foot, and multiplying the frontage of each parcel by the rate per foot. Both Lubbock, Tex., and Durham, N.C., use this method. Modifications can be made for corner lots and odd-shaped lots. In Lubbock, for example, odd-shaped lots are figured by allowing one front-foot for each 150 square feet of area. Frontage is the simplest and most commonly used method.

The area method is similar to the frontage method except that the square foot is used as the cost unit. Flat rate is based on equal division of cost among all parcels to be served by the sewer. Other methods include assessed valuation of land and actual cost in front of each particular parcel. See MIS Report No. 70 (pp. 362-365) for further information on allocating street and utility costs among property owners.

Factories, canneries, packing houses, and other plants should receive special attention when the city is allocating sewer construction costs. Before the sewers are extended to a plant, the city should survey and analyze the amount and type of sewage likely to originate in the plant. The city should require pre-treatment of any wastes which would entail special disposal methods, and the concern should pay for all design features which are necessary to serve it adequately.

For industries which do not present any special disposal problems, the same formula used for residential properties may be modified somewhat for industries covering a large area. In Lubbock, Tex., for example, lots or tracts intended for industrial, business, or commercial purposes, are charged at the same rate as residential properties. Frontage is paid on all streets which abut the property minus 150 feet frontage for each corner of the property abutting a street intersection.

Extensions Outside City Limits. No property outside the city limits should be served by the city unless the city's sewerage system and sewage disposal plant can handle the added capacity. Extensions should be made only in the interests of the health and welfare of the city's population. The city should have complete control over all such extensions. All costs should be paid in advance by the property owner, and the construction should be done to city specifications and under city inspection. The city should retain control over all connections to the line. MIS Report No. 104 presents a detailed account of municipal policy on extensions outside the city and gives examples of existing city contracts.

Control of Connections. Maintenance and replacement costs can be greatly increased if the city does not control connections to its sewers. Many cities, including Palo Alto, Wichita, and Phoenix, require that all connections to the sewer system be made by city forces. This is probably the best method since it insures that all connections will be made correctly. Another acceptable method is to issue a permit to tap a public sewer. The city can require that only licensed or bonded plumbers perform the work, establish specifications, and inspect connections before they are covered. In such a case the city should collect the inspection costs from the permittee in advance. The city plumbing code should cover the technical features of service connections to sewer and water lines.

Review of City Policies

The final section of this report describes the sewer extension policies of seven representative cities. The description for each city is divided into four paragraphs covering extensions inside city limits, extensions outside the city, subdivision controls, and control of taps or service connections.

Palo Alto, Calif., is completely sewered. As new areas are annexed, sewers are constructed and financed by special assessment. Costs are apportioned among property owners by front foot, area, or a combination of the two. The city pays none of the costs except its proportionate share for city-owned property in a benefited area.

Extensions outside city limits have been made only by contracts with sanitary districts, but no new districts are allowed.

As a new area is subdivided, the developer must install a complete sanitary sewer system, according to city specifications and inspection. A city ordinance

states that "Sanitary sewer facilities connecting with the existing City sewer system shall be installed to serve each lot and to grades and sizes approved by the City Engineer. No septic tank or cess pools will be permitted....".

City forces make all service connections, and fees are charged according to the size of the connection and the type of pavement.

Wichita, Kan., extends sewers within the city limits on petition of property owners. Plans are prepared by the city engineer, and all construction, engineering, and legal expenses are paid by property owners. Extensions are financed by special assessment bonds which are amortized over a 10-year period. Costs are prorated on the basis of assessed valuation of the parcel, excluding improvements.

The city council discourages extensions outside the city limits, and subdividers of land adjacent to the city limits must, under present policy, petition the city council for annexation to receive sewer service. Extensions have been made in the past to a county-designated benefit district with all construction, engineering, inspection, and legal costs paid by the property owners of the district. The city maintains outside extensions, and the county levies additional property taxes to reimburse the city.

The city's subdivision regulations require the installation of sewers in new subdivisions and posting of sufficient bond to cover installation costs before the city will accept the final plat. Extensions to new subdivisions inside the city limits are made on plans prepared by the city engineer. The city planning commission has authority to approve or disapprove any land subdivision in the city limits or within three miles of the city limits.

Only city-licensed drain layers are permitted to lay pipe for house sewers, and the work is done in conformance with the city specifications and inspection. Employees of the city sewer maintenance division make all taps to public sewers. The permittee pays a fee for the connection permit, and the city makes an additional charge of \$20 for each connection when the property has not been assessed for a lateral sewer and \$40 for each connection when the property has not been assessed for either a lateral or a main sewer. A charge of \$50 is made for connecting property located outside the city limits.

Schenectady, N. Y., extends sewers upon petition of 25 per cent of the benefiting property owners. All costs of engineering, inspection, debt service, advertising, and construction are paid by the property owners and financed by special assessments payable in fixed annual installments. The cost of sewers over 24 inches in diameter may be assumed in whole or in part by the city at the discretion of the council. All sewer replacements costs are assumed by the city. Sewer work is let by contract on plans and specifications prepared by the city engineer who also does the engineering and inspection work.

Sewers outside the city limits are installed by sewer districts formed in the surrounding townships. The city makes an annual charge to the district of \$30 per family connected to the sewers.

Private subdividers may install sewers with permission from the city council. They must follow city specifications and pay costs of inspection furnished by the city engineer.

Connections are made by licensed plumbers under permits from the city plumbing inspector who also inspects the actual tap. The city levies a "fixture tax" and an additional fee to cover cost of pavement restoration.

Phoenix, Ariz., extends sewers to older parts of the city in any of three ways: (1) through petition and special assessment bond financing; (2) through direct contract between property owners and a contractor using city specifications; (3) and, where special assessment bonds are not feasible, through direct city installation and repayment by property owners. In any case, the property owners pay for all costs for laterals and branches while the city assumes the cost of trunk and out-fall sewers.

The city will extend sewers outside the city limits only when existing sewerage is adequate to serve the new area, when annexation of the area is imminent, or when the health and welfare of the city is endangered. Urgent needs of small areas, the distance from the city limits, existence of sanitary districts, probable revenue from the area, and city water main extensions to the area are other factors considered for each case. Extensions are made in the same way as for those within city limits except that the city furnishes only the sewer tile for trunk-line sewers outside the city.

Property developers must install lateral and branch sewers in all new subdivisions.

All connections to city sewers are made by the city forces and the city charges \$30 for each connection plus a charge for restoring pavement.

Grand Rapids, Mich., installs sewer extensions to older parts of the city after petition by the property owners and approval by the city council. The entire cost of laterals is borne by the property owners and financed by special assessment bonds. The city prepares all plans, lets the necessary contracts, and supervises all of the work.

Grand Rapids only provides outside sewer, water, and fire protection service to areas of the four townships surrounding the city that have the same zoning and land use requirements as those in effect inside the city (see Public Management, November, 1951, p. 251). The township involved pays in advance for all sewer installations. The city prepares plans, lets contracts, and supervises all of the work.

Sewers are installed in new subdivisions on the same basis as extensions to older parts of the city.

The connections to sewers are made only by licensed plumbers under supervision by city inspectors.

Lubbock, Tex., extends sewer and water lines within city limits upon payment by the property owner of \$1 per front foot for sewer service and \$1.50 per front foot for water service. Where the extension to a given property is 100 feet or less in length, the extension is made without any additional charge beyond the front foot charges. For extensions over 100 feet, the property owner pays \$1 per front foot for the additional length of sewer line, and the city refunds the extra charge if subsequent connections are made.

Where sewer and water services are extended to a new development, the developer is required to pay the entire cost of making necessary extensions and is refunded all the above pro rata charges as connections are made. As an alternative, the developer can install utilities at his own expense with prior approval of the city for all plans and specifications. After installation the utilities become city property.

Utilities are not extended outside city limits. City policy is that outsiders who want utility and other city services must request annexation.

Service connections can be made only by licensed plumbers in the presence of the city plumbing inspector. A city permit is required at a fee of \$4.

Durham, N. C., will extend sewers in a street only after it has been opened, graded, and officially accepted by the city. The applicant for an extension within the city limits must deposit in advance \$2.90 per front foot of property abutting the entire length of the extension (\$1.45 per front foot for each side of the street). The city pays all costs in excess of this fixed charge. Applicants do not pay frontage costs for extensions past city schools, cemeteries, and parks. When subsequent connections are made to the extension, the connector pays the city \$1.45 per front foot of his property and this amount is refunded to the original applicant. The city may install sewer extensions on its own initiative and charge a connection fee equal to the frontage charges.

For extensions outside the city limits, the property owners contract privately for the work which is done under city supervision. Applicants for extensions outside the city pay all the contract costs, furnish the city with copies of the plans and specifications, and pay city inspection charges. The applicant must enter into an agreement with the city under which the sewer will be turned over to the city on its completion. The city collects \$150 for each subsequent connection and refunds the original applicant. No refunds are made after 7 years or after annexation, and the total amount refunded cannot exceed construction costs.

For subdivisions inside city limits, the developer must submit preliminary and final plats to the city. Upon approval of the final plat, the developer must grade streets at his own expense. At this point, the city water and sewer department installs the sewer lines. The developer pays \$1.45 per front foot on each side of the street, and the total amount must be deposited with the city before construction begins. For subdivisions outside city limits, the developer installs the sewer lines at his own expense under city specifications, supervision, and inspection. The sewer line must be turned over to the city upon completion. The city collects \$150 for each connection and refunds that amount to the developer.

All service connections are made by city forces at a charge of \$75 for a 4-inch lateral.

Note: Copies of typical sewer extension policies for three cities are available on loan to MIS subscribers. Grateful acknowledgment is made to K. K. King, public works director, Phoenix, Ariz., and Sherwood L. Reeder, city manager, Richmond, Va., who reviewed a preliminary draft of this report.

